

Amendments to the Claims

The following listing of claims replaces all prior versions of the claims pending in this application:

Claim 1 (original): A method of optical communication using a multimode fibre, the method comprising:

using one or more optical radiation transmitters, coupling optical radiation into the multimode fibre using a launch which restricts the number of modes excited in the fibre such that background noise is suppressed in the demodulated signals, wherein the, or each, optical radiation transmitter is a single- or multi- transverse mode laser transmitter driven by a combination of modulated radio frequency signals and/or baseband signals.

Claim 2 (original): ~~A~~ The method according to of Claim 1, where the coupling step comprises a launch which is co-linear but at an offset to the fibre axis.

Claim 3 (original): ~~A~~ The method according to of Claim 1 ~~or 2~~, wherein the or each optical radiation transmitter has a linear frequency response whereby it is responsive to both base band and RF inputs.

Claim 4 (original): An optical communication system comprising:

one or more optical radiation transmitters;

a means of coupling optical radiation from the, or each, optical radiation transmitter into a multimode fibre using a launch which restricts the number of modes excited in the fibre such that background noise is suppressed in the demodulated signals; and

a photodetector; wherein the, or each, optical radiation transmitter is a single- or multi-transverse mode transmitter arranged to couple transmission signals into the multimode fibre which signals are combinations of modulated radio frequency signals and/or baseband signals.

Claim 5 (original): ~~An~~The optical communication system ~~according to~~of Claim 4, where the means of coupling light into the fibre produces a launch which is co-linear but at an offset to the fibre axis.

Claim 6 (original): ~~An~~The optical communication system ~~according to~~of Claim 5, wherein the multimode fibre has a core diameter of 62.5µm and where the offset distance measured from the centre of the multimode fibre core to the centre of the optical radiation emitted from the transmitter is from approximately 10 µm to approximately 25 µm.

Claim 7 (original): ~~An~~The optical communication system ~~according to~~of Claim 4, ~~5 or 6~~, wherein the or each optical radiation transmitter has a linear frequency response whereby it is responsive to both base band and RF inputs.

Claim 8 (cancelled).

Claim 9 (cancelled).

Claim 10 (cancelled).

Claim 11 (cancelled).

Claim 12 (cancelled).

Claim 13 (cancelled).

Claim 14 (cancelled).

Claim 15 (new): The optical communication system of claim 4 which employs multimode fibre splitters to split the optical signal on a single multimode fibre to multiple multimode fibres for onward transmission.

Claim 16 (new): The optical communication system of claim 4 which employs multimode fibre combiners to combine the optical signals on multiple multimode fibres onto a single or multiple multimode fibres for onward transmission.

Claim 17 (new): A device for coupling combinations of modulated radio frequency signals and baseband signals into a multimode fibre using a launch which restricts the number of modes excited in the fibre such that background noise is suppressed in the demodulated signals, the device comprising at least one optical radiation transmitter having a single- or multi- transverse mode and drive circuitry having a first input port for modulated radio frequency signals and a second input port for baseband signals, the drive circuitry being arranged to receive electrical modulated radio frequency signals and baseband signals and to drive the laser transmitter therewith.

Claim 18 (new): The device of Claim 17, having an optical connector for coupling light into said fibre to produce a launch which is co-linear but at an offset to the fibre axis.

Claim 19 (new): The device of Claim 18, for a multimode fibre having a core diameter of 62.5µm, wherein the connector is arranged to provide an offset distance measured from the centre of the multimode fibre core to the centre of the optical radiation emitted from the transmitter between approximately 10 µm and approximately 25 µm.

Claim 20 (new): The device of claim 17 wherein the at least one laser transmitter has a linear frequency response whereby it is responsive to both base band and rf inputs.

Claim 21 (new): An optical communication system using a multimode fibre wherein optical signals are coupled into the fibre for transmission using a technique which restricts the number of excited propagation modes within the fibre to enable high quality transmission of modulated radio frequency signals and baseband signals.

Claim 22 (new): The optical communication system of claim 21 which employs multimode fibre splitters to split the optical signal on a single multimode fibre to multiple multimode fibres for onward transmission.

Claim 23 (new): The optical communication system of claims 21 which employs multimode fibre combiners to combine the optical signals on multiple multimode fibres onto a single or multiple multimode fibres for onward transmission.